

# A LOW-COST SATELLITE COMMUNICATION SYSTEM

## ABSTRACT

A communication system is provided that allows the use of low-cost, low-power remote  
5 terminal units that communicate substantially asynchronously and independently to a base  
station. To minimize cost and complexity, the remote terminal units are configured similarly,  
including the use of substantially identical transmission schemes, such as a common Direct  
Sequence Spread Spectrum (DSSS) code. To minimize collisions among transmissions, the  
communication system is designed to use a high-gain antenna with a limited field of view, to  
10 limit the number of cotemporaneous, or overlapping transmissions that are received at the base  
station. To cover a wide area, the limited field of view is swept across the area of coverage. To  
overcome potential losses caused by collisions, the remote terminal units are configured to repeat  
transmissions; to minimize repeated collisions, the repeat interval and/or duration is randomized.